

Optical scanning device

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The present invention relates to an optical scanning device for scanning an information layer by means of a radiation beam in a writing mode and a reading mode, the device comprising:

a radiation source for emitting said radiation beam,
5 an objective lens having an optical axis, for converging said radiation beam so as to form a scanning spot in the position of said information layer, and
a scanning spot power switch arranged in the optical path of said radiation beam, for switching the light power of said scanning spot between a first light power at the writing mode and a second, lower light power at the reading mode.

10 The present invention also relates to a scanning spot power switch suitable for an optical scanning device for scanning an optical record carrier by means of a radiation beam at a writing mode and a reading mode.

15 "Scanning an information layer" refers to scanning by means of a radiation beam for reading information in the information layer ("reading mode") and/or writing information in the information layer ("writing mode"). By extension, a writing mode may consist in erasing information in the information layer ("erase mode").

20 An optical scanning device for scanning an information layer by means of a radiation beam in a writing mode and a reading mode is known from e.g. the US patent US 4,363,116. The known device has an optical axis and comprises: a radiation source for emitting the radiation beam, an objective lens system for converging the radiation beam so as to form a scanning spot in the information layer. The beam emitted by the radiation source has a substantially circular cross-section in a plane perpendicular to the optical axis. It is
25 noted that the beam entering the objective lens system has a circular cross-section with the same size (diameter) in both the writing and reading modes.

The known scanning device further includes a scanning spot power switch arranged in the optical path of said radiation beam, for modifying the light power of said scanning spot so that the spot has a high light power at the writing mode and a low light